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STATE OF ALASKA

Walter J. Hickel, Governor

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FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-8

SPORT FISH INVESTIGATIONS OF ALASKA

ALASKA DEPARTMENT OF FISH AND GAME
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INTRODUCTION

This report of progress consists of findings and work accomplished under the State of Alaska Federal Aid In Fish Restoration Project F-5-R-8, "Sport Fish Investigations of Alaska."

The project during this report period is composed of 20 separate studies. Some are specific to certain areas, species or fisheries, while others deal with a common need for information. Each job has been developed to meet the needs of various aspects of the State's recreational fishery resource. Seven jobs are designed to pursue the cataloging and inventory of the numerous State waters. These are divided into logical utilization areas and are jobs of a continuing nature. It will be many years before an index of the potential recreational fishing waters is completed. Six jobs are directed toward specific sport fish studies. These include special efforts toward the anadromous Dolly Varden of Southeastern Alaska, silver salmon in Resurrection Bay, king salmon stocks on the lower Kenai Peninsula, king and other salmon stocks in Upper Cook Inlet, and Arctic grayling and sheefish in Interior Alaska. Special reports have been prepared on specific phases of the Dolly Varden life history and appear in the Department's special "Research Report" series.

The Statewide access evaluation remains one of the most important jobs conducted under this Federal Aid Program. It provides the Department with a tool to recommend withdrawal of suitable access sites on potential recreational fisheries throughout the State.

The remaining jobs include creel census efforts on specific fisheries in high use areas of the State, an egg-take program directed toward locating suitable indigenous stocks, perfecting advanced techniques in taking, handling and rearing species that are not normally associated with standard fish cultural practices, and continuation of the evaluation of the Fire Lake System.

The material contained in this report is often fragmentary in nature. The findings, evaluations and interpretations contained herein are subject to re-evaluation as the work progresses and additional data are collected.

RESEARCH PROJECT SEGMENT

STATE: ALASKA

Name: Sport Fish Investigations of Alaska.

Project No: F-5-R-8

Title: Creel Census of the Sport Fish and Sport Fish Waters of the Cook Inlet Drainage.

Job No: 11-D

Period Covered: July 1, 1966 to September 15, 1966.

ABSTRACT

A creel census study was conducted on five clearwater tributaries on the east side of the Susitna River between the towns of Willow and Talkeetna, and in Cottonwood Creek and the Little Susitna River in the Matanuska Valley foreplain.

Eight hundred and five anglers were contacted who had caught salmon at a rate of approximately 0.5 fish per hour.

Sunshine Creek and Montana Creek appeared to produce the best catches of silver salmon, Oncorhynchus kisutch.

Pink salmon, O. gorbuscha, composed almost the total sport catch of salmon in Willow Creek.

A poor 1966 run of silver salmon was indicated from the census to have occurred in Cottonwood Creek.

The project terminated before the scheduled completion date due to the sudden death of the project leader.

RECOMMENDATIONS

1. That creel census of stocked lakes be continued and that data from the summer and winter fisheries be treated individually.

2. That creel census of streams containing significant populations of salmon be intensively continued.

3. That within the limits of budgets and manpower, a statistical sampling design be derived for each of the fisheries listed above to estimate:

   (a) Total anglers and hours expended.

   (b) Number and size of fish caught.

   (c) Catch rate and species composition.

OBJECTIVES

1. To investigate and evaluate the sport fish harvest and fish population trends in the major recreational waters of Upper Cook Inlet.

2. To determine the expansion of angling pressures and its impact on the sport fish resources in this area.

3. To determine and provide recommendations for future investigations and management of those waters.

TECHNIQUES USED

Creel census activities were concentrated on streams containing significant salmon runs. Most of these streams are tributaries of the Susitna River and are located between the towns of Willow and Talkeetna.

The bulk of the fishing pressure occurs where the streams intersect the highway. Creel checks were conducted by driving the highway and checking anglers at each stream crossing. As many anglers as possible were contacted each day, but no attempt was made to estimate total anglers or total catch in any particular stream. Shifts in emphasis were made during the season toward streams hosting many anglers or where consistently large catches of salmon were being made.

From angler contacts, information was obtained on the seasonal timing of the species of salmon entering the sport catch at accessible stream locations, and the catch per hour rates for the various streams was censused.

FINDINGS

Results of the creel census activities are summarized in Table 1. Data are stratified into 10-day increments to show peak salmon migrations and angling pressure for the various streams.

Sunshine and Montana Creeks produced the best silver salmon catches. Peak catches occurred in early August.

In Willow Creek, catches depended almost entirely upon pink salmon. Pinks were also taken in Montana Creek in large numbers.

Cottonwood Creek has for many years been subjected to an intense sport fishery for both silver and red salmon. An intensive creel census program in 1965 indicated an angler harvest of over 400 fish of each species, McGinnis (1966). Data collected in 1966 is not directly comparable due to the method of collection, yet a great reduction of fishing effort is indicated. In 1966, 8 creel checks showed 48 anglers on the stream with 64 red salmon, O. nerka, and 11 silver salmon. A large reduction in angling effort could only be attributable to a reduction in salmon availability.

For all censused streams, slightly over 800 anglers were contacted. These anglers had taken salmon at a rate of approximately 0.5 fish per hour.

The catch per hour rate should drop radically in 1967 for those streams having large pink salmon catches, as Matanuska Valley streams traditionally contain very few pink salmon on odd numbered years.

It is also apparent that resident species make up an insignificant portion of the catch after July 1. The reduced catch of resident fishes is at least in part due to the use of large lures, not suited to the taking of these species.

Field work on this job was suspended September 12, 1966 due to the accidental death of the area biologist.

TABLE 1 - Summer Creel Census of Selected Matanuska Valley Salmon Streams, 1966.

Name of Stream	Time Interval	Census Checks	Anglers	Total Hours	Catch** SS	PS	CS	RS	Other*	Salmon/Hr.	Seasonal Salmon/Hr.
Sunshine Cr.	7/ 1-10	0									
	7/11-20	2	2	5		2	1		12	0.60	
	7/21-30	6	69	161	23	76	1	6	2	0.66	0.62
	7/31-8/9	9	130	404	214	28		2	2	0.60	
Cottonwood Cr.	7/ 1-10	0									
	7/11-20	4	37	100				58		0.58	
	7/21-30	1	2	6				3		0.50	
	7/31-8/9	1	5	20.5	10			3		0.63	0.58
	8/10-19	0									
	8/20-29	0									
	8/30-9/8	2	4	2.5	1					0.40	
Caswell Cr.	7/ 1-10	1	1	4					3		0.45
	7/11-20	0									
	7/21-30	2	13	50	1	25				0.52	
	7/31-8/9	2	24	88	19	18	1			0.43	
Sheep Cr.	7/ 1-10	2	6	34					6		
	7/11-20	0									0.26
	7/21-30	4	33	154.5	1	46	2		6	0.32	
Little Susitna River	7/ 1-10	0									
	7/11-20	0									0.15
	7/21-30	2	21	112	32				2	0.29	
	7/31-8/9	3	38	237	21				2	0.09	

* Other includes: Rainbow
Dolly Varden
Whitefish
Burbot
Grayling

** SS = Silver Salmon
PS = Pink Salmon
CS = Chum Salmon
RS = Red Salmon

TABLE 1 (Cont.) - Summer Creel Census of Selected Matanuska Valley Salmon Streams, 1966.

Name of Stream	Time Interval	Census Checks	Anglers	Total Hours	Catch** SS	PS	CS	RS	Other*	Salmon/Hr.	Seasonal Salmon/Hr.
Big Willow Cr.	7/ 1-10	2	4	10					2		
	7/11-20	1	4	16					2		0.55
	7/21-30	6	164	437.5	2	227	9		4	0.54	
	7/31-8/9	2	23	59	1	48	2			0.86	
Montana Cr.	7/ 1-10	1	5	5					4		
	7/11-20	1	2	16					9		0.54
	7/21-30	5	90	208.5	1	136	23		4	0.77	
	7/31-8/9	7	128	422	127	49	18			0.46	
Total	----	66	805	2,552.5	453	655	57	72	60	----	0.48

* Other includes: Rainbow
Dolly Varden
Whitefish
Burbot
Grayling

** SS = Silver Salmon
PS = Pink Salmon
CS = Chum Salmon
RS = Red Salmon

LITERATURE CITED

McGinnis, Dan. 1965. Inventory, Cataloging and Population Sampling of the Sport Fish and Sport Fish Waters of the Cook Inlet Drainage Alaska Department of Fish and Game Annual Report of Progress, Federal Aid in Fish Restoration, Project F-5-R-8, Sport Fish Investigations of Alaska, 7: 155-169.

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Internal Examination of the Fish Provides the Biologist with Information on the Sex, Maturity and Food Habits.